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Commission on Sustainable Development acting as the preparatory committee for the World Summit on Sustainable Development
Second session
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Item 2 of the provisional agenda*
Comprehensive review and assessment of progress achieved in the implementation of Agenda 21 and the other outcomes of the United Nations Conference on Environment and Development, as well as of the Programme for the further implementation of Agenda 21

Letter dated 14 December 2001 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

Permit me to inform you about the second meeting of the Global Forum on Sustainable Energy, held in Austria from 28 to 30 November 2001.

The Global Forum on Sustainable Energy is a platform for multi-stakeholder dialogue on issues pertinent to energy for sustainable development. It grew out of the outreach efforts of the World Energy Assessment, and is envisaged to orchestrate a series of dialogues that will facilitate decision-making on policy issues in the appropriate forums. The first and second meetings of the Forum were dedicated to rural energy because of the urgent need to address the question of bringing modern energy services to the more than two billion people currently without access to modern energy.

It is gratefully acknowledged that funding for the second meeting of the Forum was provided by the Government of Austria, the City of Vienna, the Government of Norway, the Lead-Foundation, the International Institute for Applied Systems Analysis, the United Nations Development Programme and the United Nations Industrial Development Organization.

* E/CN.17/2002/PC.2/1.

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Please find enclosed:

(a) The executive summary of the second meeting of the Forum (see annex I);

(b) The report of the second meeting of the Forum (see annex II).

I should be grateful if you would have the present letter and its annexes circulated as a document of the second session of the Commission on Sustainable Development acting as the preparatory committee for the World Summit on Sustainable Development.

(*Signed*) Gerhard **Pfanzelter**
Ambassador

Annex I to the letter dated 14 December 2001 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

GLOBAL FORUM ON SUSTAINABLE ENERGY
SECOND MEETING GFSE -2

ENERGY TECHNOLOGIES:

COOPERATION FOR RURAL DEVELOPMENT

28-30 November 2001, IIASA, Laxenburg, near Vienna (Austria)

Executive Summary

1. The Second Meeting of the Global Forum on Sustainable Energy (GFSE) took place from 28 through 30 November 2001 at the Headquarters of the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, near Vienna, Austria. The Meeting was devoted to the overall topic "Energy Technologies: Cooperation for Rural Development" and brought together some 85 participants from some 50 countries, speaking in their personal capacities from a perspective of governments, international organizations, private sector, NGOs, and academia .

Background

2. The GFSE is a platform form multi-stake-holder dialogue on issues pertinent to energy for sustainable development. The initiative, launched by the Austrian Foreign Minister, grew out of the outreach efforts of the World Energy Assessment and is envisaged to orchestrate a series of dialogues to facilitate decision-making on policy issues in the appropriate for a and to foster public-private partnerships.

3. The First and the Second Meetings of the GFSE were dedicated to rural energy, because of the urgency of bringing energy services to the more than 2 billion people currently without access to modern energy – a prerequisite for reaching the goal accepted by the international community to halve the proportion of people living on less than US $ 1 per day by 2015.

Main Points of the Second Meeting

4. The Second Meeting of the GFSE took stock of the international energy discourse as it has been evolving through the intergovernmental consensus recommendations of the Commission on Sustainable Development at its 9th session (CSD-9, April 2001), the Plan of Action of the Third UN Conference

on the Least Developed Countries (LDC-III, May 2002) and the preparatory process leading up to the World Summit on Sustainable Development in Johannesburg, in September 2002.

5. The Meeting discussed how the transfer of energy technologies suitable for rural development can be facilitated and examined several case-studies. Regional break-out sessions for the African and the Asian regions facilitated networking and better understanding of the particular challenges in a given region. Participants from various stake-holders presented views on enabling policy environments and on creating conditions for private sector involvement in the transfer of energy technologies suitable for rural needs.

Conclusions and Recommendations

6. In its concluding session the Meeting heard various views on what would constitute a desirable **outcome at the Johannesburg Summit.** The main points can be summarized as follows:

- A) Johannesburg should emphasize the message that energy is a crucial ingredient of sustainable development and that the internationally agreed development goals on poverty alleviation, education, health etc. will require progress on providing access to modern energy services to those currently without it;

- B) Energy is thus seen not as an end in and of itself but rather as a means to achieving the international development goals; quantitative indicators for energy were considered useful in order to measure progress;

- C) In order to ensure that a strong statement about energy's role in the pursuit of internationally agreed development targets emanates from Johannesburg, this message should be carried forward by interested governments, NGOs and the private sector.

- D) Efforts should be undertaken to involve the relevant line-ministries (ministries of energy, economy, development etc.) in the lead-up to Johannesburg;

- E) Johannesburg should also set in motion a suitable process to develop a work program on energy for sustainable development for the years to come; it was deplored that rural energy in particular and energy for sustainable development in general did not have well-defined institutional homes with sufficient resources; Johannesburg was seen as an occasion to enhance the institutional set-up;

- F) With regard to the provision of energy services to rural populations, it was emphasized that both thermo-energy needs (for heating, cooking and food-processing) and electrification need to be considered, that energy services need to be both available and affordable and that their provision should be socially equitable, economically efficient, lead to

empowerment and safeguard the environment; options for this exist, the main short term challenge being implementation and the long term challenge new technology; lessons learned from projects with varying degrees of success provide valuable information for the continued efforts;

- G) Given the wide variety of country situations, it was felt that the various energy options should remain open and that decisions need to be taken on a case by case basis as to which energy forms could best promote sustainable development;

- H) With regard to financing, the point was strongly made that financing is available through channels such as the IFC, but that there was a shortage of good projects that would withstand scrutiny from the perspective of conventional engineering and economics;

- I) Markets will be important to deliver access to modern energy in rural areas; however, as long as the market place is significantly tilted against such work, progress will be slow. Governments should take action to remove subsidies to conventional energy, reflect external cost in market conditions, remove import barriers that discriminate against sustainable energy options, and shift preferences of export credit agencies to sustainable energy options;

- J) Since rural energy projects in very poor areas cannot be expected to yield profits in the near term the role of public funding was emphasized and the question about the need of innovative funding, including the creation of a trust fund for renewable energy projects in rural areas, was raised;

- K) The role of governments in integrating energy considerations in national plans for rural development, in lowering transaction costs and in providing seed money for project development was emphasized. Furthermore it was pointed out that OECD governments could influence the current R&D spending on energy of which only 10 percent are devoted currently to energy efficiency and 10 percent to renewables.

- L) It was felt that there was a particular need for systems to facilitate regional and national innovation and transfer of sustainable energy technologies. In addition, it was pointed out that many SMEs needed help in formulating business plans and project proposals that would give them access to available funding sources.

7. Regarding the **future development of the GFSE**, participants felt that – in addition to energy specialists – "general" development specialists should be invited to get the message on energy's importance for development into the mainstream of the development discourse. In this regard, a role was seen for GFSE in the area of awareness building and dissemination. Participants recommended the activation of the existing website of the GFSE to enable

intersessional interaction among the participants. Several participants announced, that they would seek to identify concrete cooperation ideas in the next months so that the appropriate stake-holder dialogues could be focused and action-oriented at the next meeting of the GFSE. The development of a GFSE-manual for the evaluation of rural energy projects was proposed.

Acknowledgements

8. It is gratefully acknowledged that funding for the Second Meeting of the GFSE was provided by the following entities: the Austrian Government (Ministry of Foreign Affairs, Ministry of Economic Affairs, Ministry of Environment), the City of Vienna, the Norwegian Government, the Lead-Foundation, IIASA, UNDP and UNIDO.

Third Meeting

9. The Third Meeting of the GFSE is scheduled for 27 through 29 November 2002 and will be hosted by the City of Graz. The tentative topic for the Third Meeting is "Public-Private Partnerships for Rural Energy Development".

Documentation on the Second Meeting of the GFSE

10. A detailed report of the Second Meeting of the GFSE, prepared by IISD, will be posted at the web-site of IISD at www.iisd.ca/ Powerpoint presentations made at the Second Meeting can be viewed at the eb-site www.sustainable-energy.org . This Executive Summary and the detailed IISD-report will be forwarded to the UN-Secretary General under a cover-letter of the Permanent Representative of Austria to the UN in Vienna and circulated as an official input to the WSSD process. For further information on the GFSE please contact the Convenor, Irene Freudenschuss-Reichl at freudenschuss-reichl@un org

Annex II to the letter dated 14 December 2001 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

Sustainable Developments

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SUMMARY OF THE SECOND MEETING OF THE GLOBAL FORUM ON SUSTAINABLE ENERGY: ENERGY TECHNOLOGIES – COOPERATION FOR RURAL DEVELOPMENT 28-30 NOVEMBER 2001

The Second Meeting of the Global Forum on Sustainable Energy (GFSE-2) was held from 28-30 November 2001 at the Headquarters of the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. The meeting, which addressed the topic of Energy Technologies: Cooperation for Rural Development, was convened by Ambassador Irene Freudenschuss-Reichl, Special Representative and Assistant Director-General for UN Affairs, the UN Industrial Development Organization (UNIDO). Eighty-five participants attended, representing government agencies, United Nations bodies, business and industry, non-governmental organizations and academia. The meeting was co-sponsored by the Austrian Government (Ministry for Foreign Affairs, Ministry for Agriculture, Forestry, Environment and Water Management and Ministry of Economics and Labor), the City of Vienna, IIASA, The Know-How Transfer Center of the Austrian Association of Towns, UNIDO, the United Nations Development Programme (UNDP), and the Norwegian Ministry of Foreign Affairs.

Participants at GFSE-2 convened in plenary sessions to hear presentations and engage in discussions on: stocktaking of the international energy

development; case studies on successful modalities for transfer of energy technologies; and enabling policy environments and creating conditions for private sector involvement in the transfer of energy technologies for rural needs. Participants also met in two parallel regional breakout sessions on rural electrification and clean fuels for rural needs in Africa and in Asia and Latin America. In the final Plenary session, which included a panel discussion, participants considered desired outcomes of and proposals for the World Summit on Sustainable Development (WSSD) to be held in Johannesburg in September 2002, as well as the way forward for the GFSE.

A BRIEF HISTORY OF ENERGY FOR SUSTAINABLE DEVELOPMENT AND THE GFSE

ENERGY FOR SUSTANABLE DEVELOPMENT IN THE UN SYSTEM:

Energy was not dealt with specifically at the United Nations Conference on Environment and Development (UNCED) in 1992 and did not receive a chapter of its own in Agenda 21. However, energy considerations were included in several Agenda 21 chapters, most notably in the chapter on atmosphere. As Agenda 21 and the Rio Conventions were being implemented in the 1990s, energy emerged as a significant consideration. This was recognized at the five-year follow-up meeting to UNCED in 1997, which decided that the ninth session of the Commission on Sustainable Development (CSD-9) would address energy, transport and atmosphere. CSD-9 was preceded by comprehensive preparations on energy issues, including in meetings of the *Ad Hoc* Open-Ended Intergovernmental Group of Experts on Energy and Sustainable Development as well as regional intersessional meetings. Key CSD-9 outcomes on energy included: acknowledgement of the unsustainable nature of the current energy situation; recognition that the Millennium Development Goals (which were set out in the UN Millennium Declaration in September 2000 and include the target of halving the proportion of people subsisting on one dollar a day or less by the

services; agreement that all countries need to improve energy efficiency, rely more on renewable energy and invest in advanced energy technologies; and a decision that the international dialogue on these issues should be continued in preparation for the WSSD.

The topic of energy for sustainable development in the least developed countries (LDCs) was considered by the Third UN Conference on LDCs (LDC-III) held in Brussels in May 2001. This meeting recognized the need for energy for sustainable development and poverty alleviation, and a Round Table on Energy, organized by UNIDO, produced a list of proposed deliverables, which included: increased use, through regional initiatives, of the multifunctional platform, a simple diesel engine that can perform a wide variety of tasks in rural communities; local assembly and manufacture of renewable energy equipment; creation of energy efficiency centers and energy service companies; and development of feasibility studies and investment strategies for renewable energy projects.

GFSE: The Global Forum on Sustainable Energy (GFSE) was launched by the Austrian Minister of Foreign Affairs. It stems from outreach efforts of the World Energy Assessment initiative, which was organized by UNDP, the UN Department of Economic and Social Affairs (DESA) and the World Energy Council. The GFSE provides a platform for a series of ongoing multi-stakeholder dialogues aimed at facilitating decision-making on energy policy issues in relevant fora and fostering public-private partnerships.

The first GFSE meeting was held from 11-13 December 2000. It addressed the topic of Rural Energy – Priorities for Action, and served as preparation for CSD-9. Participants at this meeting considered the linkages between rural energy and sustainable development, the enabling frameworks for attracting investment for rural energy, lessons learned, financing issues, the challenges and opportunities of regulatory reform, and innovation.

REPORT OF THE MEETING

Participants at the Second Meeting of the Global Forum on Sustainable Energy (GFSE-2) met in plenary sessions from Wednesday, 28 November to Friday, 30 November, and in two regional working group sessions on Thursday morning, 29 November, on Africa and on Asia and Latin America, addressing rural electrification and clean fuels for rural needs. The following is a summary of the meeting's proceedings.

OPENING PLENARY

Ambassador Irene Freudenschuss-Reichl opened the meeting at 9:30 am on Wednesday, 28 November, welcoming participants and introducing the opening speakers.

OPENING ADDRESSES: Ambassador Thomas Stelzer, Austrian Permanent Representative to the UN in Vienna, underscored the importance the Austrian Government attaches to the role of energy in strengthening the three pillars of sustainable development, and highlighted the history of the GFSE. He noted the need for a new international framework for integrating energy into the global sustainable development agenda, and drew attention to the relevant institutions hosted by Vienna, including UNIDO, the International Atomic Energy Agency (IAEA), Organization of Petroleum Exporting Countries (OPEC) and IIASA. He thanked the sponsors and organizers of this meeting, and said the City of Graz would be hosting next year's meeting.

Sten Nilsson, Councilor to the Director and Leader of the Forestry Project, IIASA, noted the links between human development and energy consumption and drew attention to the four billion people without sufficient access to energy. On new energy technologies suited for rural areas, he stressed the need for a broad systems-based approach and a long-term perspective, noting that the socioeconomic, environmental, energy and rural agendas must

policy frameworks in order to generate requisite changes.

KEYNOTE ADDRESS: Ambassador Georg Lennkh, Director-General of Austrian Development Cooperation, presented the keynote speech on development cooperation on energy issues as a tool for poverty alleviation. He described a growing focus on global issues, noting the varied groupings of actors that have emerged to address these questions. Reflecting on the history of energy development, Lennkh suggested that now, 100 years after the introduction of oil as an energy form, the world may be seeing the start of a paradigm shift to renewable energies, reflecting the inability of global resources to support current high consumption levels on a universal basis through conventional fuels. He described the potential social and economic ramifications of such a change, including the potential for energy free of cost to the user, and the increased need for local energy institutions and human capacity. Lennkh highlighted the need for development cooperation to address sustainable energy services, noting that energy for sustainable development does not have a single permanent institutional home. He noted the need for local ownership and partnerships to make energy serve as a tool for poverty eradication and sustainable development.

PLENARY ONE: STOCKTAKING OF THE INTERNATIONAL ENERGY DISCOURSE

ENERGY AT CSD-9 AND LDC-III – A BASIS FOR FURTHER ACTION AT WSSD : Irene Freudenschuss-Reichl outlined the background of energy for sustainable development within the UN system, highlighting relevant outcomes of CSD-9 and the LDC-III Conference. On the way forward in the lead-up to the WSSD, she challenged meeting participants to consider a number of questions: how international and regional cooperation can be further strengthened; how the process addressing energy for sustainable development can be capitalized on for purposes of climate change mitigation;

institutions in energy for sustainable development need to be strengthened; and what the private sector needs from governments and intergovernmental cooperation in order to advance the agenda. She stressed the need to involve the "real players," including additional ministers beyond those responsible for environmental issues, and asked for ideas on what events and processes might be created to trigger the personal involvement of these ministers. Regarding the unclear institutional responsibilities for energy for sustainable development, she noted various proposals by UN agencies to strengthen their own energy-related work, and asked whether there is scope to link the endeavors, raising this as a potential topic at the WSSD.

PROCEEDINGS AND RECOMMENDATIONS OF THE 18TH WORLD ENERGY CONGRESS: Gerald Doucet, Secretary-General of the World Energy Council (WEC), reported on the proceedings and recommendations of the 18th World Energy Congress held recently in Buenos Aires, outlining the key challenges, issues, linkages and conclusions identified. Among the challenges, he highlighted affordable energy access for the poor, political and legal stability and efficiency through competition, and he discussed linkages among and between, *inter alia*: oil and gas price volatility and decoupling of economic growth and CO2 emissions; cleaner combustion technologies for oil, natural gas and coal; gas/electricity convergence and multi-energy services; and gas and potable water. Doucet then presented the Congress's conclusions, including: the emergent theme of "energy for people, energy for peace," and recommendations on the various roles of governments, regulators, energy businesses, consumers and the WEC.

Finally, Doucet advocated presentation at the WSSD of three targets developed through the Congress: accessibility at the level of 500 kilowatt-hours of energy per person per year for every person in the world by 2020; establishment of a Political Risk Co-Insurance for Energy Projects scheme to cover up to $30 billion in new investment in developing countries; and the

Clean Development Mechanism (CDM).

THE EXPERIENCE OF THE G8 TASK FORCE ON RENEWABLE ENERGY: Maria Dalla Costa, Italian Agency for Environmental Protection, presented a background of the G8 Task Force on Renewable Energy, which provided recommendations at the G8 Summit in Genoa. Having identified price, insufficient human and institutional infrastructure, high upfront costs, weak incentives and inconsistent policies as barriers to renewable energy, the Task Force made a number of recommendations, including on: reducing technology costs by expanding developed country markets and supporting research and development, including in developing countries; encouraging public-private cooperation and industry voluntary targets; supporting integration of energy policy into poverty reduction strategies; providing support to renewable energy industries for joint ventures with developing countries; mobilizing "patient capital," which does not provide return on investment over the short term, from tax and other support schemes; addressing energy in the context of the Millennium Development Goals; and supporting guarantee funds, refinancing schemes and loans for small renewable energy projects. Dalla Costa concluded that individual G8 countries are now taking initiatives to implement the recommendations, thereby furthering the goal of serving up to one billion people in the next decade with renewable energy sources.

IPCC'S SPECIAL REPORT ON TECHNOLOGY TRANSFER: Bert Metz, Intergovernmental Panel on Climate Change (IPCC), presented the IPCC's Special Report on Technology Transfer. He outlined a number of trends, including a decrease in official development assistance (ODA), and listed the major barriers to technology transfer, highlighting: the need for data, information, knowledge and awareness; a limited access to capital; lack of human and institutional capacity; the need to understand and incorporate local needs; and the lack of codes and standards for environmentally sustainable technologies.

Metz described a successful pilot solar home project in Kenya and a Mongolian wind project providing half a million people with electricity. He identified needs and challenges for an enabling environment, including the need to reduce tied aid in the trade policies of developed countries and to improve macro-economic stability in developing countries. He noted the need for common efforts on internalization of social and environmental costs, protection of intellectual property rights, promotion of open and competitive markets and reduced corruption.

Based on the IPCC's work, Metz advocated the development of National Systems of Innovation to meet the need for, *inter alia*, integrated capacity building, the stimulation of partnerships between domestic and international stakeholders, and a focal point for the variety of technology transfer funders.

THE WORLD ENERGY ASSESSMENT – NEXT STEPS: Thomas Johansson, Lund University, presented next steps for the World Energy Assessment (WEA). He outlined the extensive changes over the last ten years identified by the report, largely in government activities but also in private sector involvement in energy issues, where a clearer focus is needed. Johansson asked participants to take the present opportunity to consider goals for achievement at the WSSD, as well as activities to move energy issues forward, and the ongoing role of the private sector and academic community. He supported the next WEA spanning a five-year period, rather than the three-year period of the first report.

DISCUSSION: Issues raised by participants in response to the presentations included: the need for marketing and distribution strategies to bring renewable sources of energy to rural areas; questions of energy pricing and equity; and the need for guidelines to ensure sustainability of investments supported by Export Credit Agencies. On North-South links between markets for renewable energy technology, some participants stressed the importance of expanding

economy of scale effect. Others emphasized differences between industrialized and developing countries and the need for technology development to be locally driven, and solutions to be derived from practical, on-the-ground experiences. One speaker highlighted the existence of relevant technology, calling for capacity building to focus on issues related to accessing funding and attracting investment.

PLENARY TWO: SETTING THE STAGE FOR FACILITATING THE TRANSFER OF ENERGY TECHNOLOGIES SUITABLE FOR RURAL DEVELOPMENT

OVERVIEW OF AVAILABLE ENERGY TECHNOLOGIES FOR RURAL DEVELOPMENT: Amulya Reddy, International Energy Initiative, spoke on goals, strategies and policies for sustainable energy for rural areas. He stressed that rural energy systems must be instruments of sustainable rural development, incorporating the dimensions of economic efficiency, equity, empowerment and environmental soundness. He highlighted the correlation between the Human Development Index (HDI) and energy consumption, emphasizing that at first, large HDI improvements are possible with small energy inputs. After this, improvements are more indirect, based on increased incomes. Turning to energy technologies, he underscored a range of solutions suitable for the present, near-term, medium-term and long-term timescales. Based on these considerations, he called for balanced energy portfolios.

FINANCING MODALITIES FOR THE TRANSFER OF ENERGY TECHNOLOGIES: Demetrios Papathanasiou, International Finance Corporation (IFC) of the World Bank, opened his presentation by emphasizing that the IFC is in search of renewable energy projects to fund. He listed barriers to renewable energy development, including: a high ratio of capital costs to operating costs; unfamiliarity with the concept among financiers and sponsors; small project size; new technologies; either excess or absence of

under-priced conventional energy sources. Papathanasiou outlined the World Bank's renewable energy and energy efficiency investments, focusing on the Small and Medium Scale Enterprise Program that funds NGOs and commercial enterprises to act as financial intermediaries for loaning to small businesses. He described photo voltaic (PV) and efficient lighting initiatives that effect market transformation through product development and sustainable commercialization efforts.

Papathanasiou concluded by suggesting that industry needs to: create partnerships between manufacturers and energy service providers; identify market barriers; assume technical risk; share commercial risk; and commit risk capital. He said the IFC can assist with project preparation and be an "honest broker" between local partners and foreign investors. It can also provide concessional funding and facilitate host government support.

CTI'S CONTRIBUTION TO RURAL DEVELOPMENT: Thorbjorn Fangel, speaking on behalf of the Chair of the Climate Change Initiative (CTI), Thomas Becker, noted that the CTI, which was launched under the UN Framework Convention on Climate Change (UNFCCC), seeks to accelerate the transfer of climate friendly technology to developing countries in pursuit of their development objectives. He said the CTI prepares the ground for the private sector by improving developing country capacity. He highlighted the goal of accelerating technology transfer through wider adoption of existing technologies, development and deployment of new technologies, and involvement of the private sector as an active partner. He outlined cooperative technology implementation plans developed for individual countries based on needs assessment and active stakeholder involvement. He said investment in renewable energy is needed at a scale that can be realized only through private sector involvement, while adding that governments must provide the framework for market-based approaches.

FLEXIBLE INSTRUMENTS: Konrad Autengruber, VATech Hydro, compared the profiles of hydro production in 1997 and 2020 in terms of prevented emissions and installed capacity, and the contrasting primary uses in Africa for irrigation and Australasia for water supply. He described the trend of redevelopment and rehabilitation of existing turbines, in which 30-40 year old power plants are modernized to increase output while reducing plant maintenance costs and obviating the need for investment in additional fossil fuel power sources. He described a turbine unit currently in pilot development, which generates 200-600 kW and is suited to powering lock systems, irrigation facilities and drinking water reservoirs.

Autengruber identified joint implementation (JI) and the CDM as mechanisms through which hydro power can be used to meet the Kyoto Protocol's targets, noting that these require bilateral contact between governments and industry.

RURAL PV – MAKING IT REALLY HAPPEN: Philippe de Renzy Martin, Siemens and Shell Solar, provided an industry perspective based on the experience of his company, a joint venture manufacturing PV modules. He provided an overview of seven commercial experiments in South Africa, Sri Lanka, India, the Philippines, Morocco, Bolivia and China, outlining both differences and similarities between the projects. He said real commercial opportunities exist but are at a niche level only, and said that while PV has grown rapidly on a global scale, rural PV growth has been proportionally much smaller than that of grid-connected PV. He concluded by stressing three crucial issues for creating viable rural off-grid PV projects in developing countries: effective local credit; an on-the-ground operator; and commitment from local authorities.

DISCUSSION: In the subsequent discussion, one participant highlighted a new Norwegian initiative on gas flaring to reduce pollution and produce energy. Another participant stressed the need for empowering people by

electricity. In response to a question on how public-private partnerships work, Papathanasiou stressed that every situation is unique and there is no one formula that suits all circumstances, and noted that it is important that all partners are willing to be actively involved.

One participant underscored the need to consider stability of energy services, as well as questions of affordability, accessibility and reliability of energy supply. Another suggested setting international goals on sustainable and renewable energy alongside the Millennium Development Goals. Others underscored the role of micro-finance, and Amulya Reddy stressed the differences between such arrangements and traditional lending.

PLENARY THREE: CASE STUDIES ON SUCCESSFUL MODALITIES OF TRANSFERRING ENERGY TECHNOLOGIES FOR RURAL DEVELOPMENT

NAMCHE BAZAR – A PILOT PROJECT CASE STUDY: A representative of Eco-Himalaya described a cooperative pilot project carried out by the Austrian and Nepalese governments and an Austrian NGO to build a small hydro power plant in Nepal serving 4000 Sherpa families and the local tourist industry. Motivated by the need to alleviate environmental strain from increasing tourism while also meeting energy demand, the plant uses a dual pricing system to provide residential power at a low, fixed price and commercial energy at a higher cost.

Despite challenges such as poor local understanding of electricity, resentment of outside workers, and a complete wash-out of the construction site by a glacial lake flood, the representative said the plant is operating successfully. He stressed that the project has, *inter alia*, gained social acceptance, reduced the energy-related workload of women, created new employment opportunities, and stimulated small business activities. He cited lessons learned from the project that include the need for high quality parts, training of

this successful project model as the guideline for future remote rural electrification projects by the Nepalese government.

WOMEN AND ENERGY: Susan McDade, UNDP, noted that energy issues affect women and men differently. She said the ways in which women are affected by energy services varies according to their specific situations, activities and roles, and their lives are in many ways determined by the energy situation in households. She introduced a UNDP publication "Energy and Women - Generating Opportunities for Development," containing eight case studies, and presented a case from Ghana where women secured access to energy for more efficient extraction of shea butter and production of smoked fish. The project included stakeholder consultation, training and a credit scheme. On lessons learned from the eight projects, she highlighted the importance of an enabling policy environment and said that:

- the needs of different rural communities vary widely and solutions must be site-specific;
- environmental and health issues must be addressed within the context of overcoming poverty and income generating opportunities;
- national energy policies that increase economic opportunities for women can promote multiple development objectives;
- effective marketing strategies are needed for realizing commercial opportunities and long-term financial viability;
- targeted efforts are needed to incorporate women's concerns throughout energy policymaking, design and implementation; and
- mechanisms are needed to capture lessons learned.

USING THE CLIMATE CONVENTION TO ACCELERATE TECHNOLOGY

Peter Pembleton, UNIDO, presented modalities for using the UNFCCC to accelerate technology transfer to developing countries, as illustrated by an African case study. This ongoing UNIDO programme fosters teams of national experts in various African countries in order to increase local capacity, with the goal of ensuring the prerequisites for meaningful participation in the CDM. Pembleton noted the phased goals of the programme to identify needs, develop programme proposals for submission to funding sources, and implement the resulting programmes. He said energy aspects of the scheme encompass co-generation, efficiency measures, audits, management systems and fuel switch options. He described outcomes including the creation of core issue teams for each country, the mobilization of stakeholders in each major economic sector of participating countries, increased understanding of barriers to project completion, and development of CDM project portfolios.

AFRICAN RURAL ENERGY ENTERPRISE DEVELOPMENT INITIATIVE: Mark Radka, UNEP, outlined the African Rural Energy Enterprise Development Initiative (AREED), which provides support services for small energy company entrepreneurs. AREED's aim is to improve provision of clean energy services, build capacity in the private sector and develop sustainable projects for investors, with a focus on being able to replicate positive examples of improving clean energy service provision. Radka noted that AREED partners itself with local NGOs and financial institutions, and provided examples of its work in Ghana and Zambia .He said the AREED experience has shown that "a little of everything" and a willingness to experiment with various alternatives works better than a concentration on one single solution. It has also demonstrated that good partners are critical, training and encouragement are as important as the right financial investment, and institutional buy-in is imperative. In response to a participant's question, Radka noted that AREED's role should be catalytic, paving the way for other institutions to take on the activities.

PLENARY FOUR: ENABLING POLICY ENVIRONMENTS AND CREATING

OF ENERGY TECHNOLOGIES SUITABLE FOR RURAL NEEDS

BUSINESS ALLIANCES IN SUPPORT OF THE WSSD PROCESS: Juhani Santaholma, International Chamber of Commerce (ICC), described a business network launched jointly by the ICC and World Business Council for Sustainable Development, which is oriented toward the WSSD. He identified businesses' roles in the context of sustainable development, in terms of providing sustainable energy, clean water and affordable health care and market access for products from the developing world, and said the network will foster cooperation with UN agencies, GFSE, and other international bodies and agencies.

Santaholma pointed out that with global energy consumption expected to double by 2025, there is a need to actively support new energy technologies through research and development and cooperation between scientists, governments and industries. He said commercialization is the only means by which technologies can work long-term, and stressed the need for attention within corporations to the three pillars of sustainable development. He then listed a number of conditions required for business activity in sustainable energy, including linkages with capacity building and technology transfer, varied financing options and resolution of intellectual property rights issues. Discussion following the presentation addressed the ties between Northern and Southern business development.

A CALL FOR A PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT THROUGH WORLD ELECTRIFICATION: François Verneyre of the E7 power organization said his group was formed by the nine biggest energy companies of the OECD in 1992, in response to power sector reform and in the spirit of UNCED, to provide a contribution by the power sector to sustainable development. He outlined electrification in the industrialized countries through state-owned, centralized monopolies. He highlighted ways in which conditions in developing countries today differ, including that rural populations are more dispersed and projects less financially viable. He noted the lack of worldwide

worldwide electrification fund in addition to sponsoring ongoing activities such as a Code of Good Practice Principles for the sector, CDM initiatives and a joint report with UNEP on the electric power sector. He invited participants to cooperate with E7 and said the electrification fund could be considered at the WSSD.

CONSIDERATIONS IN SMALL HYDRO POWER – SIGNS OF SUSTAINABILITY AND THE FUNCTION OF COMMUNITIES OF INTERESTS: In his presentation on small hydro power (SHP), Bernhard Pelikan, Austrian Association for the Promotion of SHP, presented the environmental impacts of this technology and the perspectives of its professional associations. Regarding environmental considerations, he described the need to take into account both site implications such as possible change in river regimes and global implications such as pollution load and alternatives for equivalent energy output. He stressed the need to balance the interests of users against environmental protection and perform "environmental-economical efficiency analysis" to optimize the engineering of SHP projects for these factors. He also highlighted the need to develop a new "green" identity for SHP. Discussing the function of interest group communities on SHP, Pelikan described the benefits that accrue from including both consumers and producers in associations that periodically meet and discuss SHP issues. The subsequent group discussion on this issue focused on the need to put the highest priority on bringing energy to people, and on the image of SHP as an environmentally-friendly technology.

ENERGY FOR POVERTY REDUCTION – THE CONCEPT OF THE MULTIFUNCTIONAL PLATFORM AS A REGIONAL PROJECT: Laurent Coche, UNDP/UNIDO, highlighted the energy situation in Sub-Saharan Africa, especially with regard to women who are "lowest on the energy ladder." He introduced the multifunctional platform (MFP), a simple diesel engine that can be used for a variety of activities such as water pumping, dehusking, grinding and the provision of lighting. He noted that it is implemented according to local

managed by women's committees, pays for itself and is made from local equipment. He highlighted an impact study on the MFP, which revealed that it saves women time, increases their incomes and impacts positively on girls' education, as girls have more time to attend school. He said the MFP can contribute to the Millennium Development Goals, provides opportunities for economic growth through enterprise development, and can help build communities. He noted that the project will be further expanded and training is taking place. In response to a participant's question on fuel use, he said biofuels are being tested for the MFP, but as diesel is readily available and cheap it is being used as a first step.

PERSPECTIVES OF THE AUSTRIAN CLIMATE ALLIANCE: Wolfgang Mehl, Austrian Climate Alliance, spoke on the Climate Alliance model of grassroots environmental organization, which works with decision-makers at the municipal and community levels to advance environmental issues. Listing the goals of the Alliance, which include a 50% reduction in CO2 emissions by 2010, he outlined group activities such as supporting local chapters made up of community leaders, politicians, NGOs, business groups and interested citizens, providing an umbrella group for environmental efforts, and engaging in direct lobbying.

Mehl described the organization's partnership with the indigenous people of the Brazilian Amazon, which, *inter alia*, seeks to protect forests by supporting policies within Europe that prevent use of Amazonian timber, and supervises and assists projects by the Institute for International Cooperation. In discussion, the projects of European Climate Alliance chapters outside Austria were examined and practical considerations for meeting the Kyoto Protocol targets were raised.

RENEWABLE ENERGY IN PAPUA NEW GUINEA: Atul Raturi, Papua New Guinea University of Technology, outlined the energy situation in his country, noting the geographical context of great variation of elevations and a fragile environment. He identified decentralized renewable energy systems as the

to rugged terrain, dispersed populations and lack of infrastructure. He said PV is being used to provide lighting for schools, health centers and vaccine refrigeration, and highlighted examples of PV for telecommunications. However, he noted that biomass for cooking represents more than half of home energy consumption. Raturi outlined concerns related to large-scale and micro hydro, noting problems due to seismic activity and lack of maintenance, and said there is potential for some geothermal energy and off-shore wind farms. On rural electrification, he noted that replacing kerosene lamps leads to lower levels of indoor pollution and safer homes. He outlined solutions based on specific circumstances and said capacity building, courses on renewable energy technology, and research on new PV materials are ongoing. Participants highlighted the need to tailor solutions to specific circumstances, and one speaker called for more cost-benefit analysis.

AGRO-ECOSYSTEMS AND CLIMATE CHANGE: Guenther Fischer, IIASA, made a presentation on the IPCC's climate change predictions in the context of agricultural production. Noting uncertainty in modeling and in social change, he described the connections between socio-economic development, emissions and concentrations, climate change and human and natural systems. Fischer outlined both positive and negative effects of global environmental change, including in precipitation patterns, soil moisture conditions and surface runoff. He elaborated on an IIASA project that incorporates climate, soil, terrain, land cover and databases to produce an integrated view of agricultural impacts, noting the need to further incorporate socio-economic change into this formula.

Fischer presented the results of this analysis, which show that some areas will experience net positive impacts from climate change, but that many developing countries can expect damage from temperature and precipitation changes. He pointed out the negative interaction of climate change with poverty and environmental vulnerability. He concluded by stating that integrating mitigation, adaptation and sustainable development policies would

He identified the need for long-term vision, efficient and consistent short- to medium-term strategies, and effective international negotiation on climate issues.

REGIONAL WORKING GROUP SESSIONS: RURAL ELECTRIFICATION AND CLEAN FUELS FOR RURAL NEEDS

On Thursday morning, 29 November, participants at GFSE-2 met in two regional working group sessions, on Africa and on Asia and Latin America, to address rural electrification and clean fuels for rural needs.

AFRICA: Yvette Stevens, Special Coordinator for Africa and the LDCs at the UN Department of Economic and Social Affairs (DESA), chaired the session, which consisted of presentations followed by a group discussion on Africa's rural energy challenges and needs. In her opening statement, Chair Stevens stressed that while energy issues in Africa have been discussed over a number of years and even decades, the required results are still lacking. She provided an overview, noting a number of political declarations and resolutions on energy development in Africa. She said that in spite of the availability of resources on the continent, most of the population has limited access to energy to meet basic needs and energy shortages constrain development. She highlighted the energy goal of reducing the number of people without access to modern energy by half by 2015. Stressing the complexity of the problem, she said sustained efforts are required. Given Africa's rich but unevenly distributed resources, she said key issues to address include strategies and policies as well as financing and technology transfer.

Three participants made presentations to the group. The first focused on different types of energy, noting that resources are varied and that when solutions are sought, they should not be limited to certain types of energy. The second presentation addressed rural energy systems and introduced a rural energy model that serves as a planning tool. The third presentation addressed the successful experience with demand side management in South Africa.

The group then considered constraints in addressing rural energy needs, focusing on policy issues. Participants highlighted, *inter alia,* that: energy is dealt with in isolation rather than as an aspect of development planning and policy and by all ministries; energy is low on national agendas; energy has not been recognized in the context of the Millennium Development Goals; the indirect benefits of energy development should be made explicit; energy strategies are needed to avoid a piecemeal approach to energy for rural development; and all situations are unique so solutions should be tailored.

Chair Stevens noted that energy must be integrated into the overall development agenda, and stressed the importance of explicit energy policies. She said each country is different and must examine its own resources and find policies to promote affordable energy for rural areas. She stated that most African countries do not have comprehensive rural energy policies, and added that where such policies exist, they are not well incorporated into the overall system. She also noted the need for technical assistance for energy policy development and the importance of data.

On energy financing constraints, participants observed that resources generally are inadequate, and there is insufficient investment capital and access to international resources. Interventions were made stressing that: more capacity is needed to attract CDM investment; prices are lower if local technologies and locally manufactured equipment are used for rural energy development; financing for rural and urban areas is very different; local solutions exist and should be harnessed; the opening of the power market to competition can lower prices; a framework for international assistance in energy development at the national level needs to be set; stability, clear rules and predictability are needed in order to attract businesses and private finance; rural electrification requires active government intervention and subsidies; people's purchasing power needs to be increased; and applied research in the end-user context is needed.

Chair Stevens summarized the discussion by noting various points raised, including that:

- setting policy is not enough, and strategies involving clearly defined actions need to be adopted;
- in terms of energy choices, renewables are not the only solution for rural energy, but the circumstances and resources in every country must be examined and costs considered;
- users must ultimately pay for energy, although assistance is needed in the initial phases;
- the public sector should foster an environment to attract businesses to the rural energy sector, and energy markets should be opened; and
- regulatory rules are needed and could be articulated in the energy strategy.

Stevens also noted a need for sharing of experiences in Africa. Participants drew attention to the need for training and information dissemination, noted the decrease in aid and stressed that African countries need to set their own agenda. Stevens noted the importance of ownership and consideration of energy in poverty reduction strategy papers (PRSPs). She also highlighted links to the wider issues of economic growth and commercial/industrial energy.

Participants also briefly discussed technology transfer, noting that it will occur if the policy and financing frameworks are in place, that research on renewable energy sources should be undertaken at the level of the end-user to build capacity, and that a clear commitment from industrialized countries is needed.

ASIA AND LATIN AMERICA: This session was chaired by Jyoti Parikh, Senior Professor, Indira Gandhi Institute of Development Research, and began with speeches outlining the relevant concerns of various developing country

session then proceeded to address the following issues: affordability and financing; market mechanisms; subsidies; capacity building; and technologies. In articulating their concerns, developing country representatives described the specific situations they are faced with, including: the challenge of rural electrification for nomadic populations; government-based electricity financing; lack of technology and human capacity; problems specific to small island developing states; the applicability of renewable energy to off-grid electrification; private sector financing; and the need for local autonomy in problem-solving.

In discussing affordability and financing, participants differentiated between capital and operating costs, with some noting that rural populations can often support the latter but not the former. Some participants raised the need for unconventional funding sources, though one NGO speaker noted that unconventional funding models were also required to reflect the unique cost structures of renewables when compared with conventional energy sources. Many participants questioned the potential of market mechanisms to achieve rural electrification, citing lack of capital for small-scale entrepreneurship, the expense of PV technology, and the abandonment of uneconomical populations by the market. While some participants found that questions of materials and expertise resolved themselves once a market was formed, those in other regions said they had found these problems to be more enduring.

In exploring the role of subsidies in energy markets, one participant described the clearly-formulated methodology used by his government to determine appropriate support levels. Another discussed choices in which elements of the supply chain receive subsidies, stressing that allocation of subsidies at the technology development or capital cost level is a better long-term strategy than subsidizing consumer cost. Several speakers highlighted the importance of transparency in subsidy allocation, and one noted the need to ensure that subsidies are time-limited and channeled to the poor.

extension and in providing a regulatory environment to encourage private investment, especially in oil and gas expansion. One participant also noted, however, that early regulation can suppress the entrepreneurial environment. Other speakers addressed: government bias toward urban populations; the contrast between the ideal of free markets and the reality of governments shaping market development; and the issue of whether electricity provision is defined as a commodity to be supplied by markets or as an infrastructure development burden of governments, and the pricing implications of this choice.

Regarding capacity building, participants agreed that local expertise is needed to support new technologies, but opinions differed on the advantages of using outside expertise as opposed to local management and operation, with several agreeing that in the case of technically complex projects the strategic choice might be to import experienced operators. Several participants noted the requirement of local legal and institutional knowledge to support energy projects. One participant called for an international agency to aid developing countries in technical project proposal development and the search for financing. Another underlined the importance of developing country governments assuming responsibility for their own agendas, ideas and solutions rather than relying on their developed country counterparts to supply these.

Discussion of energy technologies addressed questions of system design and sizing, on- and off-grid solutions and the importance of using high-quality components. Participants debated the knowledge requirements of making informed technology choices, and noted the need for standards in local parts manufacture. Many agreed that training for maintenance is a key concern, citing unfamiliarity with basic machines, untranslated equipment manuals and cultural differences for an "operation and repair" mentality rather than one of "operation and maintenance." This concept was related to a larger migration from energy supply to energy services supply, whereby energy systems are viewed in the context of end user considerations.

Other points raised during this session included:

- the importance of viewing energy provision as a means to an end rather than an end in itself;
- the feasibility of meeting the Millennium Development Goals via renewable energy sources;
- conflicts in prioritization between short-, medium- and long-term technological solutions;
- the importance of varied solutions based on local conditions;
- synergies with other industries;
- energy security; and
- gender equity concerns.

PLENARY FIVE: REPORTS FROM THE REGIONAL WORKING GROUPS

This session, moderated by Irene Freudenschuss-Reichl, included presentations from the working groups as well as general discussion. Vladimir Stehlik, GFSE consultant, presented a summary of the discussion in the Asia and Latin America working group the previous day, highlighting that: while the problem of energy is different in each development context, the energy plight of many developing societies is shared; energy plays a part in every theme of modern development practice; and energy is a means to a goal and not an end in itself.

Stehlik recapped the group's discussion on technologies, including on the fact that technology exists but affordability remains a problem, and on factors contributing to maintenance problems. On financing, he drew attention to discussions on, *inter alia*, subsidies and the role of government, the presence or absence of markets and need for unconventional funding mechanisms.

points, including the need to balance economic and environmental considerations, and the possible tensions between rural and urban needs. Stehlik drew particular attention to the lack of solutions generated by the discussion, and the need to spread the message of energy for sustainable development.

Jyoti Parikh, Chair of the Asia and Latin America working group, highlighted some key points from that discussion, including the importance of energy security, the need to embrace all potential energy sources, and the eventual transition to an economically sustainable energy supply.

Yvette Stevens, Chair of the Africa working group, reported on the outcome of discussions in that group, noting that it had identified achievements and constraints, and examined required actions to achieve sustainable energy services in rural areas. She highlighted the following constraints: lack of recognition of the importance of energy in meeting the Millennium Development Goals; absence of comprehensive energy policies; failure to translate polices into strategies and action plans; lack of opportunities for financing; and lack of appropriate research and development and access to technology. Regarding actions required, she stressed the need to integrate energy considerations into the development agenda, technical assistance for policy development and energy planning, and seed financing to set up energy programmes. She also called for education and training and the exchange of experiences, and noted the importance of data. She proposed launching a campaign to bring to the attention of development planners the importance of energy.

DISCUSSION: In the ensuing discussion, one developing country participant highlighted concerns over the need to make a clear distinction between capital and operating costs, and the role of small enterprises in ensuring that the benefits of energy provision are kept within the community. Another participant underlined the importance of viewing energy as a means to an end, and of addressing energy services over technologies.

participants expressed the view that energy specialists are overly removed from development problems, with one participant claiming that energy policy leads to centralization and large energy investments rather than actually solving problems. One developed country participant described an "energy ghetto" in which specialists work, and advocated incorporation of poverty assessment models and greater integration with specialists in development issues to make the linkages more clear. Other participants supported the need for energy policy and planning, some highlighting the role of local level planning in addressing development goals.

A participant from a UN organization raised two issues: first, the importance of addressing energy in a way that includes but is not limited to electrification; and secondly, the need for explicit attention to be given to rural heating energy, especially through liquefied petroleum gas. A speaker from a financing organization responded by stressing the importance of maintaining a level playing field rather than advocating any specific fuel or technology, to allow a clear view of the social, environmental and economic benefits of all solutions.

CLOSING PLENARY – THE WAY FORWARD

On Friday, 30 November, the final Plenary session opened with a panel discussion on the desired outcomes of and proposals for the WSSD from the perspective of the GFSE, including with regard to three practical targets identified by the World Energy Council (WEC) related to accessibility, availability and acceptability of energy. Panelists and participants also addressed the way forward for the GFSE, considering the proposed GFSE-3 topic of public-private partnerships for rural development, as well as the possibility of building the meeting around specific project ideas and bringing in the relevant project stakeholders.

PROPOSALS FOR THE WSSD: Comments from the Panel: Ibraheem Diso, Leadership for Environment And Development (LEAD) International, suggested that the WSSD address the issue of carbon trading, raising the

UK Department for International Development, speaking in his personal capacity, advocated promoting recognition of how energy can assist in achieving the Millennium Development Goals. Amulya Reddy proposed that energy for sustainable development, taking into consideration the economic efficiency, equity, empowerment and environment components, should be on the agenda. He stressed the importance of maintaining a grand vision while taking small steps on the ground. He supported improving living standards in developing countries by providing a low, but meaningful, base level of energy for the poorest two billion people. Philippe de Renzy Martin noted the need to define a few priority issues for the WSSD, and put forward specific actions and projects to make them happen. Kirsty Hamilton, Greenpeace, cautioned against allowing the WSSD to be dominated by statements rather than action, and suggested promoting recognition of sustainable energy as essential to development and providing more information on it, setting goals to provide a framework for action on sustainable energy, and creating mechanisms for financing. Thomas Johansson proposed lobbying for recognition of the necessity of energy in reaching the Millennium Development Goals at the second Preparatory Committee (PrepCom) in January 2002. He stressed that the message should come jointly from governments and civil society.

Discussion: On the role of governments, one participant stressed that they remain major stakeholders and markets alone cannot resolve the issues at hand. Others proposed that the WSSD facilitate regional and national plans of action. Johansson said governments can play an important role in building capacity on energy for sustainable development, and in determining priorities for government-funded energy research and development that is currently not primarily channeled into sustainable options.

On specific WSSD topics, one participant proposed that the Summit consider what global institutional set-up might be needed to promote issues related to energy for sustainable development. Another stressed the need to ensure that there is a paragraph in the WSSD's negotiated outcome document stating that energy is key to development.

On targets, one participant noted the need for complementary and clearly defined actions for their achievement. Richard Jones cautioned that targets can easily go wrong and need to be meaningful for the people on the ground. He noted that credibility is lost when unattainable goals are set. Philippe de Renzy Martin said targets should be set by those who commit to them and must be specific in order to be met.

Chair Freudenschuss-Reichl outlined actions to be taken by the GFSE in preparation for the WSSD, namely promoting the issue of sustainable energy by disseminating the report of the meeting on the Internet and presenting it to the second PrepCom and to the UN Secretary-General for distribution through UN diplomatic channels. A print volume of the proceedings would also be produced in time to influence the second PrepCom.

GFSE – THE WAY FORWARD: Chair Freudenschuss-Reichl welcomed comments on the next steps for the GFSE, noting that the problems are well known and analyzed, and now concrete solutions for changing the reality on the ground are needed. She suggested one way forward might be to identify a few solutions through well-defined projects.

Ibraheem Diso noted that project money is available but few people know how to access it. This concern was also voiced by several other participants, while one participant working in rural Africa cited barriers to securing local loans, such as a reluctance on the part of banks to work with rural and small-scale entrepreneurs. He described a collaboration with Dutch NGOs to demonstrate the mutual profitability of such in-country lending. A participant from Africa underscored the need for affordable project money.

An IFC representative noted that the awarding of loans depends on Bank-implemented economic and engineering analyses of projects, which led many participants to comment on the lack of rural capacity in such analysis and in project proposal development. Amulya Reddy advocated the establishment of an organization to help small-scale entrepreneurs in project proposal and analysis, and another participant suggested that retired engineers and finance

included holding a workshop on proposal development and authoring a manual on proposal development and evaluation methods at GFSE-3. Discussion also addressed the need for year-round information exchange and lobbying on sustainable energy issues, and Kirsty Hamilton suggested a role for GFSE in hosting an interactive online forum to address these needs. Richard Jones highlighted the potential of new information and communication technologies to improve information flow.

Participants also addressed the role of energy specialists in creating energy and sustainable development linkages within government agencies, and continued focus on targets for energy issues. Thomas Johansson reemphasized previous discussions of how energy markets are distorted through subsidies, export credits and other means, and called for more in-depth discussion on this at GFSE-3.

Chair Freudenschuss-Reichl noted progress in addressing inputs to the WSSD and the proposals for activities and agenda items at GFSE-3. She thanked participants and declared the final Plenary closed at 1:00 pm.

THINGS TO LOOK FOR BEFORE GFSE-3

RIO '02 – WORLD CLIMATE AND ENERGY EVENT: This event will be held from 6-11 January 2002 in Rio de Janeiro, Brazil. The objectives are to analyze current developments in climate and energy research, demonstrate latest technology and discuss appropriate measures for implementation. For more information visit: http://www.rio02.de/

INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY FOR RURAL DEVELOPMENT: This conference will be held from 19-21 January 2002 in Dhaka, Bangladesh, and will consider the technical scope of power generation from offshore wind, waves, current and tidal schemes. The conference will also consider technologies for the medium- to long-term and will address technical challenges in developing renewable energy sources. For more information contact: A.K.M. Sadrul Islam, Convener; fax: +880-2-861-3046; e-mail: sadrul@me.buet.edu

SUSTAINABLE DEVELOPMENT: This meeting will take place from 28 January – 8 February 2002 at the UN Headquarters in New York. It will review the results of national and regional preparatory processes, examine the main policy report of the Secretary-General, and convene a Multi-stakeholder Dialogue. For more information contact: Andrey Vasilyev, DESA; tel: +1-212-963-5949; fax: +1-212-963-4260; e-mail: vasilyev@un.org; Major groups contact: Zehra Aydin-Sipos, DESA; tel: +1-212-963-8811; fax: +1-212-963-1267; e-mail: aydin@un.org; Internet: http://www.johannesburgsummit.org/

DELHI SUSTAINABLE DEVELOPMENT SUMMIT 2002: This meeting will be held from 9-11 February 2002 in New Delhi, India. The theme will be "Ensuring sustainable livelihoods: challenges for governments, corporates, and civil society at Rio+10." For more information visit: http://www.teriin.org/dsds/index.htm

INTERNATIONAL CONFERENCE ON FINANCING FOR DEVELOPMENT: The UN International Conference on Financing for Development will be held from 18-22 March 2002 in Monterrey, Mexico. It will bring together high-level representatives from governments, the United Nations, and other leading international trade, finance and development-related organizations. For more information contact: Financing for Development Coordinating Secretariat, United Nations Headquarters, New York, Harris Gleckman, tel: +1-212-963-4690; e-mail: gleckman@un.org or Federica Pietracci, tel: +1-212-963-8497; e-mail: pietracci@un.org; Internet: http://www.un.org/esa/ffd

THIRD PREPARATORY SESSION FOR THE 2002 WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT: This meeting will take place at UN Headquarters in New York from 25 March – 5 April 2002. It will aim to produce the first draft of a "review" document and elements of the CSD's future work programme. For more information contact: Andrey Vasilyev, DESA; tel: +1-212-963-5949; fax: +1-212-963-4260; e-mail: vasilyev@un.org; Major groups contact: Zehra Aydin-Sipos, DESA; tel: +1-212-963-8811; fax: +1-212-963-1267; e-mail: aydin@un.org; Internet: http://www.johannesburgsummit.org/

SUSTAINABLE DEVELOPMENT: This meeting will take place from 27 May – 7 June 2002 in Indonesia. It will include Ministerial and Multi-stakeholder Dialogue Segments, and is expected to result in elements for a concise political document to be submitted to the 2002 Summit. For more information contact: Andrey Vasilyev, DESA, New York; tel: +1-212-963-5949; e-mail: vasilyev@un.org; Major groups contact: Zehra Aydin-Sipos, DESA; tel: +1-212-963-8811; e-mail: aydin@un.org; Internet: http://www.johannesburgsummit.org/

16TH SESSION OF THE UNFCCC SUBSIDIARY BODIES: SB-16 is provisionally planned to be held in Bonn, Germany, from 3-14 June 2002. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.de; Internet: http://www.unfccc.de

WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT: The World Summit on Sustainable Development will take place in Johannesburg, South Africa, from 2-11 September 2002. For more information contact: Andrey Vasilyev, DESA, New York; tel: +1-212-963-5949; e-mail: vasilyev@un.org; Major groups contact: Zehra Aydin-Sipos, DESA; tel: +1-212-963-8811; e-mail: aydin@un.org; Internet: http://www.johannesburgsummit.org/

EIGHTH CONFERENCE OF THE PARTIES TO THE UNFCCC: COP-8 is provisionally planned to take place from 23 October - 1 November 2002, at a location to be determined. For more information contact: the UNFCCC Secretariat, Bonn, Germany; tel: +49-228-815-1000; e-mail: secretariat@unfccc.int; Internet: http://www.unfccc.int/

GFSE-3: The third meeting of the Global Forum on Sustainable Energy will be held in Graz, Austria, from 27-29 November 2002. The meeting will focus on public-private partnerships for rural development. For more information contact: Irene Freudenschuss-Reichl, UNIDO; tel: +1-212-963-6890; fax: +1-212-963-7904; e-mail: freudenschuss-reichl@un.org

Sell malena@iisd.org. The Editor is Chris Spence chris@iisd.org. Director of IISD Reporting Services (including *Sustainable Developments*) is Langston James "Kimo" Goree VI kimo@iisd.org. Funding for coverage of this meeting has been provided by the Government of Austria. The authors can be contacted at their electronic mail addresses and at tel. +1-212-644-0204. IISD can be contacted at 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba R3B 0Y4, Canada; tel: +1-204-958-7700; fax: +1-204-958-7710. The opinions expressed in *Sustainable Developments* are those of the authors and do not necessarily reflect the views of IISD. Excerpts from *Sustainable Developments* may be used in other publications with appropriate academic citation. Electronic versions of *Sustainable Developments* are sent to e-mail distribution lists (ASCII and PDF format) and can be found on the Linkages WWW-server at http://www.iisd.ca/linkages/. For further information on *Sustainable Developments*, including requests to provide reporting services, contact the Director of IISD Reporting Services at kimo@iisd.org.